

Generis GmbH

Augsburg

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Patent claims

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1. A procedure for layered composition of models, whereby at least a first material is applied to an assembly platform, followed by selective application of a second material layer; these two application steps are repeated until the required model is achieved and both materials form a solid structure in an appropriate mixture ratio. The first material comprises a moulding sand; the first and/or second material comprises a bonding agent encompassing a salt-crystal binder and/or protein binder.

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2. A procedure according to claim 1, whereby the bonding agent is mixed into the first material.

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3. A procedure according to claim 1 or 2, whereby the first material is a mixture comprising the bonding agent and moulding sand.

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4. A procedure according to one of the previous claims, whereby the moulding is coated with the bonding agent.

5. A procedure according to one of the previous claims, whereby the bonding agent is mixed into the second material.

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6. A procedure according to one of the previous claims, whereby the first material comprises moulding sand and bonding agent, and the second material comprises a solvent.

7. A procedure according to one of the previous claims,  
whereby the solvent essentially comprises water.
- 5 8. A procedure according to one of the previous claims,  
whereby the second material is applied by means of droplet  
generation.
9. A procedure according to one of the previous claims,  
10 whereby the second material is applied by means of screen  
printing or spraying through a template.
10. A procedure according to one of the previous claims,  
whereby the solvent is removed by drying after an  
15 appropriate reaction time has elapsed.
11. A procedure according to one of the previous claims,  
whereby the moulding sand comprises quartz sand, zircon  
20 sand, olivine sand and/or fireclay sand.
12. A procedure according to one of the previous claims,  
whereby the bonding agent comprises magnesium sulphate,  
sodium polyphosphate and/or proteins.  
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13. Implementation of the procedure according one of the  
claims from 1 to 11 for manufacturing components serving  
as moulds for metal casting.

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Summary

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Described is a procedure for layered composition of models, whereby at least a first material is applied to an assembly platform, followed by selective application of a second material layer; these two application steps are repeated  
10 until the required model is achieved and both materials form a solid structure in an appropriate mixture ratio. The first material comprises a moulding sand; the first and/or second material comprises a bonding agent encompassing a salt-crystal binder and/or protein binder.

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